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## CURRENT LITERATURE.

### BOOK REVIEWS.

#### The algal vegetation of the Faeröese coasts.

BÖRGESEN's extremely interesting account of the algal associations on the coasts of the Faeröe Islands,<sup>1</sup> is one of the most important contributions to the ecological side of marine botany. The work is a description of conspicuous algal associations along a varied rocky coast line, particularly favorable to algal vegetation, and is illustrated by more than thirty very excellent plates and figures from photographs. The factors affecting the algal vegetation are discussed; such as temperature and salinity of the water, tides and currents, wave action, temperature and humidity of the air, and light. The littoral and sublittoral floras are described, both for exposed and sheltered coasts, and also the floras of tide-pools and caves. A great many algal associations and formations may be clearly recognized in the Faeröes, some of them very conspicuous, as the Chlorophyceae formation, the Porphyra association, Fucaceae formations, Laminariaceae formation, and Alaria association. A particularly interesting chart plots the position of these associations in their position above and below the mean sea level.

It is extremely interesting to note that the cave flora is composed of forms of the sublittoral flora, which in the dim light are able to grow near the surface, or they are types which have the habit of growing in shaded situations outside. Littoral forms which grow in the brightest light are only found near the entrance of the caves. On entering a cave a condensed picture is obtained of the vertical distribution of algae from above downward. The forms in the deepest shadows are all red algae and some of them species which are usually found at great depths in the open sea. It is clear that light is the most important factor affecting the position of algal associations along a coast.

There is a detailed comparison of the algal flora of the Faeröe Islands with neighboring countries, Scotland, the Orkney and Shetland Islands, Norway, and Iceland, preliminary to a discussion of its origin. The flora had its origin from a mixture of Atlantic and Arctic species, which wandered northward with the retreat of the ice. Some of the arctic forms remained, adjusting themselves to the warmer waters, but there are many peculiarities of the algal flora which demand special explanations. BÖRGESEN does not believe that there were post-glacial bridges of land which made possible the migration of forms, but holds that factors now operative might have brought to the islands many algae from neighboring countries.

<sup>1</sup> BÖRGESEN, F., The algal-vegetation of Faeröese coasts. Imp. 8vo. pp. 681-834. *pls. 13-24.* Copenhagen: H. H. Thiele. 1905. [Reprinted from Botany of the Faeröes. See BOT. GAZETTE 36:392. 1903.]

Sea currents are regarded as of greatest importance. The pronounced currents from the nearest land do not bathe the islands, but experiments have proved that heavy winds and storms will drive floating objects out of the main currents, and BÖRGESEN believes the general conditions to be favorable to the introduction of algae from the west and north coasts of Ireland, the west coast of Scotland, and the Hebrides, while the currents from east Iceland run straight to the Faeröes. It is also possible that algae may be introduced from the west coast of Norway. Fragments of the algae may drift for many days, especially such as are provided with bladder-like floats, or their spores may be so carried, and floating pieces of timber covered with algal growths are known to travel long distances. Smaller algae of the littoral flora are very likely to be introduced with mud upon the feet and bodies of birds. Finally BÖRGESEN believes that algae may be introduced through the shipping which visits the islands.

These are merely some of the most striking conclusions in an account that is full of interesting observations on the life conditions and habits of marine algae.—B. M. DAVIS.

#### Plant diseases.

FREEMAN has produced a finely illustrated volume on plant diseases,<sup>2</sup> the first part of which is devoted to a discussion of fungi in general, while the second special part treats of specific fungous diseases of plants. The object of this book, as set forth in the preface, is "rather educational than immediately practical." It is an attempt to give a general account of the nature of fungi, for the purpose of encouraging study on the part of farmers and horticulturists rather than the habit of dependence upon rules and formulae. On this account the scope of the work becomes rather broader than would be indicated by the title, *Minnesota plant diseases*.

The first part comprises a discussion of the morphology, physiology, and ecology of fungi; but, while this part contains much excellent material, the arrangement lacks the logical sequence of first importance in a book of an educational character. It consists rather of a series of interesting pictures without due regard to pedagogical principles. This is likely to leave the mind of the reader confused. The sub-headings of the first chapter on nutrition are as follows: What the fungi are; The fungus method of obtaining nutrition; How the nutritive method is expressed in structure; Parasitism and saprophytism; Storage organs; Fungus shoestrings or strands; Physiology of the mycelium. Then, in chapter III, Fungus life methods, we have as the first subhead, again, Parasitism and saprophytism, the rest of the chapter dealing with habits or rather habitats of different fungi. Too great an effort is made to avoid scientific terms. Thus we have such confusing combinations as "spore-like swimming-spore-cases," "Sac-spore-capsule." It would seem that the reader who can comprehend the allusions to the phylogenetic relationships between fungi and algae would not find it too difficult to comprehend a few scientific terms.

<sup>2</sup> FREEMAN, E. M., Minnesota plant diseases. Imp. 8vo. pp. xxiii+432. figs. 211. St. Paul: Report of the Survey. Bot. Ser. V. 1905.